UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,128	08/08/2001	Ian J Forster	P/61459-PCT	8713

156 7590 08/10/2004

KIRSCHSTEIN, OTTINGER, ISRAEL
& SCHIFFMILLER, P.C.
489 FIFTH AVENUE
NEW YORK, NY 10017

EXAMINER	
AU, SCOTT D	

ART UNIT	PAPER NUMBER
2635	9

DATE MAILED: 08/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/831,128	Applicant(s) FORSTER, IAN J
	Examiner Scott Au	Art Unit 2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is in response to applicant's response to an Amendment B, which is filed May 13, 2004.

An amendment B to the claims 13-23 have been entered and made of record in the Application of Forster for "A receiver circuit" filed August 8, 2001.

Claims 24-34 are pending.

Claims 13-23 are cancelled.

Response to Arguments

Applicant's amendments and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior arts to overcome the rejection of said claims under 35 U.S.C 102(a) and 35 U.S.C 103(a) as discussed below. Applicant's amendment and argument with respected to the pending claims 24-34, filed on May 13, 2004, have been fully considered but they are not persuasive for at least the following reasons.

On page 5, third paragraph, Applicant's argument with respect to the invention of Hasler that "Hasler operates to oscillate at the carrier frequency, whereas the present invention operates to oscillate at the modulation frequency", is not persuasive.

Hasler discloses the invention relates to a self-oscillating mixing stage for FM radio receivers comprising a transistor, for producing the oscillator signal and in whose base-emitter circuit the high-frequency signal is coupled in and from

whose collector circuit the intermediate-frequency signal is coupled out, an absorption circuit for the intermediate-frequency signal, this absorption circuit being formed by an inductance and a capacitance, being provided in the emitter circuit of this transistor. Known self-oscillating mixing stages of this type are usually operated in the grounded-base circuit mode to produce the oscillator signal and also to process the high-frequency and the intermediate-frequency signal, respectively (col. 1 lines 6-19). The receiver is an FM (i.e. frequency modulation) radio receiver; therefore, modulation frequency is the same as carrier frequency.

On page 6, first paragraph, Applicant's argument with respect to the invention of Hasler that the limitation "oscillating sensing means connected to the resonator circuit and arranged to receive the oscillating signal and to sense characteristics of build-up of oscillation to indicate a presence of the modulation carrier signal", is not persuasive.

The limitation "oscillating sensing means connected to the resonator circuit and arranged to receive the oscillating signal and to sense characteristics of build-up of oscillation to indicate a presence of the modulation carrier signal" is rejected in view of Minakuchi et al., therefore, the argument against Hasler is not persuasive.

On page 6, third paragraph, Applicant's argument with respect to the invention of Hasler that the limitation "periodically quenching oscillation", is not persuasive.

The limitation "periodically quenching oscillation" is rejected in view of Minakuchi et al., therefore, the argument against Hasler is not persuasive.

On page 7, first paragraph, Applicant's argument with respect to the invention of Minakuchi et al. that the limitation "the quenching of transistor T2 is not periodic as in the present invention", is not persuasive.

Examiner rejected the "oscillation quenching means (32) (i.e. a quenching oscillator) for periodically quenching oscillation of the transistor (T1) (col. 1 lines 35-51 and col. 4 lines 59-68). The transistor (T1) is being quenching not Transistor (2). Therefore, the argument is not relevant to what being claimed. Furthermore, Forster (US# 5,822,685) is now cited to teach the periodic of as claimed.

On page 8, second paragraph, Applicant's argument with respect to the invention of Hasler in view Minakuchi et al. that "even if technically feasible, does not render the present claimed invention obvious to a person skilled in the art", is not persuasive.

Hasler discloses a receiver, where the transistor in a self-oscillating mixing stage is operated in the grounded-collector circuit mode to produce the oscillator signal. For that purpose the collector circuit in which the intermediate-frequency signal is coupled out comprises a short-circuit for the oscillator signal, so that now more intermediate-frequency signal are processed in the collector circuit and, consequently, the possibility that the intermediate-frequency circuit being influenced by the oscillator circuit and, inversely, the oscillator circuit being influenced by the intermediate-frequency circuit is definitely eliminated over the overall receiving range (col. 1 lines 30-45).

In the same field of receiving device, Minakuchi et al. disclose superregenerative receiver wherein at least one oscillation condition of a quenching oscillator is modified or altered into its optimum value in response to the instantaneous output of the oscillator in order to insure substantially maximum sensitivity. The superregenerative receiver embodying the present invention is able to provide constantly stable receiver performance with substantially the maximum sensitivity despite variations in power supply voltages, ambient temperature and circuit components.

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to include a quenching oscillator for quenching oscillation of the transistor; and a control for sensing characteristics of a build-up of oscillation to indicate a presence of the modulated carrier signal disclosed by Minakuchi et al. into receiver circuit of Hasler with the motivation for doing so would allow the circuit to operate at low power consumption and cost wise.

In the same field of endeavor of receiver circuit, Forster discloses an oscillator quenching means for "periodically" quenching oscillation of the transistor (col. 2 lines 5-67 and see Applicant's specification on page 3 lines 14-23).

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to include an oscillator quenching means for "periodically" quenching oscillation of the transistor of Forster in the used of quenching means of Hasler in view of Minakuchi with the motivation for doing so would allow higher current and gain.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 24-29 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasler (US# 4,264,980) in view of Minakuchi et al. (US# 4,393,514) and further in view of Forster (US# 5,822,685).

Referring to claim 24, Hasler discloses a receiver circuit comprising:

an antenna (5) (i.e. an antenna) for receiving a modulated carrier signal (i.e. FM radio signal) at a modulation frequency (i.e. Examiner interprets modulation frequency is the same as frequency modulation, FM);

a transistor (10) (i.e. a transistor) connected to the antenna (5) (i.e. an antenna) and configured to operate as a detector of modulation of the carrier signal (i.e. FM radio signal) (i.e. see Abstract and col. 2 lines 5-14; see Figure available);

a resonator circuit (11) (i.e. a resonator circuit) connected to the transistor (10) (i.e. a transistor) and configured such transistor (10) (i.e. a transistor) simultaneously self-oscillates at substantially the modulation frequency to produce an oscillation signal

(col. 2 lines 15- 43; see Figure available). However, Hasler did not explicitly disclose an oscillator quenching means for periodically quenching oscillation of the transistor; and means for sensing characteristics of a build-up of oscillation to indicate a presence of the modulated carrier signal.

In the same field of endeavor of receiver circuit, Minakuchi et al. teach an oscillator quenching means (32) (i.e. a quenching oscillator) for quenching oscillation of the transistor (T1); and means (8) (i.e. a control) for sensing characteristics of a build-up of oscillation to indicate a presence of the modulated carrier signal (col. 1 lines 35-51 and col. 4 lines 59-68; see Figures 5-6) in order to modify at least one oscillation condition of the quenching oscillator.

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to include a quenching oscillator for quenching oscillation of the transistor; and a control for sensing characteristics of a build-up of oscillation to indicate a presence of the modulated carrier signal disclosed by Minakuchi et al. into receiver circuit of Hasler with the motivation for doing so would allow the circuit to operate at low power consumption and cost wise.

However, Hasler in view of Minakuchi et al. did not explicitly disclose an oscillator quenching means for "periodically" quenching oscillation of the transistor.

In the same field of endeavor of receiver circuit, Forster discloses an oscillator quenching means for "periodically" quenching oscillation of the transistor (col. 2 lines 5-67 and see Applicant's specification on page 3 lines 14-23) in waveform.

Therefore, it would have been obvious to a person of ordinary skilled in the art at the time the invention was made to include an oscillator quenching means for "periodically" quenching oscillation of the transistor of Forster in the used of quenching means of Hasler in view of Minakuchi with the motivation for doing so would allow higher current and gain.

Referring to claim 25, Hasler in view of Minakuchi et al. and further in view of Forster disclose a receiver circuit of claim 24. Minakuchi et al. disclose in which the oscillator quenching means quenches the oscillation of the transistor when a magnitude of the oscillation reaches a selected magnitude, and in which the means for sensing measures a time between quenching of the transistor to indicate the presence of the modulated carrier signal (col. 4 lines 59-68 and col. 6 lines 52-54).

Referring to claim 26, Hasler in view of Minakuchi et al. and further in view of Forster disclose a receiver circuit of claim 24. Minakuchi et al. disclose in which the selected magnitude is a point at which oscillator compression of the transistor occurs (col. 6 lines 31-54).

Referring to claim 27, Hasler in view of Minakuchi et al. and further in view of Forster disclose a receiver circuit of claim 24. Minakuchi et al. disclose in which the oscillator quenching means quenches the oscillation of the transistor at regular time intervals, and in which the means for sensing measures a magnitude of the oscillation

over at least one of the time intervals to indicate the presence of the modulated carrier signal (col. 7 lines 20-47).

Referring to claim 28, Hasler in view of Minakuchi et al. and further in view of Forster disclose the receiver circuit of claim 24. Forster discloses in which the transistor comprises of a field effect transistor (col. 1 lines 37-40 and col. 2 lines 10-16).

Referring to claim 29, Hasler in view of Minakuchi et al. and further in view of Forster disclose the receiver circuit of claim 28 above. Forster further discloses in which the oscillator quenching means quenches the oscillation of the field effect transistor by varying a drain source current (col. 1 lines 37-40, col. 2 lines 10-16 and col. 3 lines 15-29).

Referring to claim 32, Hasler in view of Minakuchi et al. and further in view of Forster disclose a receiver circuit of claim 24. Minakuchi et al. disclose in which the resonator circuit (311) comprises a network of at least one of a capacitor and an inductor (col.1 lines 42-43; see Figures 2, 6, 9 and 11).

Referring to claim 33, Hasler in view of Minakuchi et al. and further in view of Forster disclose the receiver circuit of claim 24 above. Forster discloses further comprising a matching network (3) (i.e. matching network) between the antenna (2) and the transistor (1) (col. 2 lines 9-14; see Figure 1).

Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasler (US# 4,264,980) in view of Minakuchi et al. (US# 4,393,514) and Forster (US# 5,822,685) as applied to claim 24 above, and further in view of Brekelmans (US# 5,710,993).

Referring to claim 30, Hasler in view of Minakuchi et al. and further in view of Forster disclose the receiver circuit of claim 24. However, Hasler in view of Minakuchi et al. and Forster did not explicitly disclose in which the resonator circuit comprises a ceramic resonator.

In the same field of endeavor of receiver apparatus, Brekelmans teach the resonator circuit comprises a ceramic resonator (col. 4 lines 40-44) in order to determine the oscillation frequency.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include the resonator circuit comprises a ceramic resonator disclosed by Brekelmans into receiver circuit of Hasler in view of Minakuchi et al. and Forster with the motivation for do so would allow the determination of the oscillation frequency.

Referring to claim 31, Hasler in view of Minakuchi et al. and further in view of Forster disclose the receiver circuit of claim 24 above. Brekelmans further discloses the resonator circuit comprises a quartz crystal (col. 4 lines 40-44).

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasler (US# 4,264,980) in view of Minakuchi et al. (US# 4,393,514) and further in view of Forster (US# 5,822,685) as applied to claim 24 above, and further in view of Gerz (US# 6,094,147).

Referring to claim 34, Hasler in view of Minakuchi et al. disclose the receiver circuit of claim 24. However, Hasler in view of Minakuchi et al. and Forster did not explicitly disclose in which the modulated carrier signal is at least one of a frequency and a phase modulated carrier signal, and further comprising a narrowband filter for converting the at least one of the frequency and the phase modulated signal to an amplitude modulated signal before the modulated carrier signal is applied to an input of the transistor.

In the same field of endeavor of modulated signal, Gerz teaches in which the modulated carrier signal is at least one of a frequency and a phase modulated carrier signal, and further comprising a narrowband filter (110) for converting the at least one of the frequency and the phase modulated signal to an amplitude modulated signal before the modulated carrier signal is applied to an input of the transistor (col. 3 lines 13-19; see Figure 2) in order for the filter serves to suppress noise and permits a narrow-band gain of the measured signal in the amplifier.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include the modulated carrier signal can be mixed

e.g. by proper-phase multiplication of the modulated carrier frequency signal, and further comprising a narrowband filter to suppress noise and permits a narrow-band gain of the measured signal in amplifier disclosed by Gerz into receiver circuit of Hasler in view of Minakuchi et al. and Forster with the motivation for doing so would allow signal is converted before it is applied to the input of the transistor.

Conclusion

Any inquiry concerning this communication or earlier communications form the examiner should be directed to Scott Au whose telephone number is (703) 305-4680. The examiner can normally be reached on Mon-Fri, 8:30AM – 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached at (703) 305-4704. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-3906.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-305-3900.

Scott Au

BRIAN ZIMMERMAN
PRIMARY EXAMINER